

IN THE CLAIMS:

Claim 1 (Twice Amended) Apparatus for processing materials in an atmospheric pressure radio-frequency non-thermal plasma comprising:

an electrically conductive enclosure defining an interior space with a surface and openings for introductions of a gas and for entry and exit of a material to be processed while said interior space is at or near atmospheric pressure;

an electrode situated inside said interior space and spaced apart from said surface of said interior space a distance sufficient to allow placement of said material to be processed;

a mechanical action for placing said material to be processed inside said interior space on said electrode or between said electrode and said electrically conductive enclosure;

wherein a gas containing a majority of inert gas is introduced into said interior space through said opening for introduction of a gas and a radio-frequency voltage applied between said electrically conductive enclosure and said electrode creates an atmospheric pressure plasma in said interior space for processing said material to be processed within said electrically conductive enclosure.

Claim 3 (Amended) The apparatus as described in Claim 1, wherein said gas is comprised of said inert gas and a chemically reactive gas.

Claim 9 (Twice Amended) Apparatus for processing materials in an atmospheric pressure radio-frequency non-thermal plasma comprising:

an electrically conductive enclosure defining an interior space with a surface and inlets for a gas and for entry and exit of a material to be processed while said interior space is at or near atmospheric pressure;

an electrode spaced apart from said electrically conductive enclosure and capable of placing said material to be processed inside said interior space